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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,135	12/01/2003	Hermann Ruckerbauer	INF-117	1211

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EXAMINER

BRITT, CYNTHIA H

ART UNIT	PAPER NUMBER
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2138

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,135

Applicant(s)

RUCKERBAUER ET AL.

Examiner

Cynthia Britt

Art Unit

2138

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/12/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims 1-20 are presented for examination.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on May 12, 2004 has been considered by the examiner. Form 1449 has been signed and returned with this office action.

Drawings

The drawings are objected to because descriptive labels other than numerical are needed for figures 1-5. See 37 CFR 1.84(o). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 4 is objected to for containing a plurality of elements or steps which are not separated by a line indent. An amendment is required to put the claim in proper format. Line indents aid in understanding the logical grouping of a claim's elements.

The following is a quotation of 37 CFR § 1.75(i):

(i.) Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.

Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 1, 2, 4, 5, 13, 14, 17, and 28, the term "useful data" is a relative term which renders the claim indefinite. The term "useful data" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite

degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. As it is unclear why, how, or even to whom the data is useful, this terminology is unclear.

Claims 2-11 are dependent on claim 1 and therefore inherit the 35 U.S.C. 112, second paragraph issues of the independent claim 1 and may not be further considered on their individual merits.

Claims 14-16 are dependent on claim 13 and therefore inherit the 35 U.S.C. 112, second paragraph issues of claim 13 and may not be further considered on their individual merits.

Claims 18-20 are dependent on claim 17 and therefore inherit the 35 U.S.C. 112, second paragraph issues of the independent claim 17 and may not be further considered on their individual merits.

As per claim 1, the phrase "at least one buffer device connected to the data memory devices at least via data lines" is unclear. This phrase could mean connected by at least one data line, or it could mean that the buffer is connected to the memory device by other means. Clarification of this issue is imperative to the understanding of the claimed invention.

The phrase "and serving to condition at least data signals transferred on the data lines between the data memory devices and a memory checking device of the data memory system" is also unclear. This could mean that it conditions at least one data line of that it could condition other signals that may be also connected between the memory

device and the memory checking device. This also must be clarified within the claim language for proper understanding of the claimed invention of the present application.

As per claim 4, the phrase "an error detecting unit operable, during a transfer of useful data to the memory module, to form and to store the redundancy data and, during a transfer of useful data to the memory checking device, to form check data from the useful data to be transferred and also to compare respectively corresponding redundancy data and check data" is not clear. The examiner suggests that either line indents or steps be used within this claim.

As per claims 5 and 14, the term "erroneous useful data" is not clear. The examiner would assume this means data found to have errors, but this language is unclear because useful data should not be erroneous data. These terms are contradicting.

As per claim 6, it is unclear to the examiner if this phrase "the memory module is absent a contact device assigned to a data line for transferring redundancy data" means that the redundancy data cannot be transferred. Clarification is required.

As per claim 17, the phrase "essentially error free useful data" is a relative term which renders the claim indefinite. The term "essentially error free useful data" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 12, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshimura U.S. Patent No. 6,421,274.

As per claims 1, 12, and 17, Yoshimura teaches the claimed device and method in which a nonvolatile semiconductor memory having a structure of a plurality of blocks, wherein read and write commands are executed in block units, with a capacity size of a single block being an integer multiple of a single sector size corresponding to a processing unit of the host terminal for reading and writing data; a first buffer memory and a second buffer memory for mediation of data transmission between the host terminal and the nonvolatile semiconductor memory, each of the first and second buffer memories having a capacity corresponding to a single sector size of the nonvolatile semiconductor memory, and a controller for controlling data transmission in sector units between the host terminal and the buffer memories and between the nonvolatile memory and the buffer memories by alternately selecting the first and second buffer memories, and when one of the buffer memories performs transmission of data corresponding to one sector with the host terminal, the other buffer memory

simultaneously performs transmission of data corresponding to another sector with the nonvolatile semiconductor memory. Error correction is also provided. (Figure 6, Abstract, column 3 lines 30-50)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"A Highly Efficient Transparent Online Memory Test" by Thaller in the International Test Conference, 2001 Proceedings Publication Date: 2001 page(s): 230-239

This paper teaches a The transparent online memory test (TOMT) proposed in this paper has been specifically developed for online testing of word-oriented memories with parity or Hamming code protection. Using a rotated address sequence the algorithm passes four times through the whole address space and performs embedded march tests for every word. The careful interleaving of word-oriented and bit-oriented test allows one to attain a fault coverage and a test duration comparable to the widely used March C- algorithm. The proposed memory test detects all stuck-at faults, all transition faults, all address decoder faults (even stuck-open address decoder faults), all single coupling faults (CFs, even write and read disturb CFs) and a reasonable percentage of linked CFs. Nevertheless, the algorithm is suitable for online use and can be implemented in hardware with moderate effort.

“ Achieving Fault Secureness in Parity Prediction Arithmetic Operators: General Conditions and Implementations” by Nicolaidis et al. in: European Design and Test Conference, 1996. ED&TC 96. Proceedings Publication Date: 11-14 March 1996
page(s): 186 - 193


This paper teaches that parity prediction arithmetic operator schemes have the advantage that they are compatible with data paths and memory systems checked by parity codes. Nevertheless, the basic drawback of these schemes is that they may not be fault secure for single faults, since they propagate multiple output errors that are undetectable by the parity code. In this paper we derive necessary and sufficient conditions for parity prediction arithmetic operators to achieve the fault secure property. From these conditions, various fault secure designs for arithmetic operators are reported

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 571-272-3815. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Cynthia Britt
Examiner
Art Unit 2138